REMARKS

Claims 22 and 24-42 are pending in the above-captioned application. Claims 22 and 24-42 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Yoo et al., U.S. Patent No. 6,309,591 in view of Harada et al, U.S. patent No. 6,432,158.

In responding to the office Action mailed November 14, 2006, the Response filed February 14, 2007 pointed out that Yoo et al. could not be used to form or shape a mixture of carbon fibers and matrix material into a carbon/carbon composite material as the variable speed D.C. motor, pulley, and rotating plunger of Yoo et al. would likely rupture carbon fibers through the application of shear. Even furthermore, Yoo et al. even identifies shear (resulting from the rotating plunger, pulley, D.C. motor components) as causing the "deformation of the powder particles, [and] de-agglomeration of the particles" which would also likely rupture carbon fibers.

In the Office Action mailed March 14, 2007, this argument is rejected because the use of the claimed apparatus on materials containing carbon fibers is not directly claimed. By amendment herein, however, independent claims 22, 30 and 39 have been amended to affirmatively claim the fact that the inventive apparatus is for use with materials comprising carbon fibers. Support for these amendments appears in the specification at, e.g., paragraph [00026]. Thus, since as explained above and in the February 14, 2007 Response, the Yoo et al. apparatus is different from that of the above-captioned application, and not suitable for use with carbon

fiber-containing materials, the claims of the above-captioned application are patentably distinguished from Yoo et al., even if combined with Harada et al.

More specifically, Yoo et al., discloses an apparatus for bonding a particle material to near theoretical density, including means for applying high shear to deform an object wherein parallel planes remain parallel, but are shifted relative to one another, through the rotation of a plunger in contact with the material of which to be bonded (Yoo et al. includes the use of a pulley in rotational engagement with a variable speed D.C. motor, via a belt and is illustrated in Fig. 12). This apparatus is distinct form that claimed herein, and provides for high shear which is deleterious in the environment in which Applicant's apparatus performs.

Conversely, the above-captioned application relates to an apparatus for forming composites which can be used for friction bearing or structural applications, and utilizes carbon fibers. The invention of the above-captioned application utilizes pistons with a hydraulic system to minimize shearing of the carbon fibers, and is different from the disclosure of Yoo et al. Specifically, the hot press does not include equipment so as to rotate the pistons as rotation of the pistons would likely shear carbon fibers included within the fiber and matrix material.

The Yoo et al. device could not be used to form or shape a mixture of carbon fibers and matrix material into a carbon/carbon composite material as the variable

speed D.C. motor, pulley, and rotating plunger of Yoo et al. would likely rupture carbon fibers through the application of shear. Quite simply, the rotating plunger of Yoo et al. would be detrimental and undesirable for the formation of a carbon/carbon composites formed from a fiber reinforcement as the integrity of the fibers would be compromised.

Accordingly, Applicant believes that all of the pending claims are in condition for allowance and respectfully requests a favorable action to that effect.

CONCLUSION

Based on the foregoing amendments and remarks, it is believed that all claims 22 and 24-42 are in condition for allowance. Such action is earnestly sought. If there remains any matter which prevents the allowance of any of the pending claims, the Examiner is requested to call the undersigned collect at 615.242.2400 to arrange for an interview which may expedite prosecution.

Respectfully submitted,

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CERTIFICATE OF ELECTRONIC TRANSMITTAL

I hereby certify that this Response to Office Action for Application No. 10/760,946, filed on January 20, 2004, is being transmitted electronically to:

Mail Stop Amendment
Commissioner for Patents
Art Unit: 1722
Examiner: Thukhanh T. Nguyen

on June 14, 2007.

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